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RELATIONSHIP BETWEEN FAMILY SUPPORT AND DIETARY ADHERENCE
AMONG HYPERTENSION PATIENTS

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Abstract

Introduction: Hypertension is a highly prevalent non-communicable disease that poses a major public health challenge; however, successful blood pressure control remains hindered by low patient adherence to dietary recommendations. Family support through motivation, monitoring, and the provision of appropriate meals plays a crucial role in improving dietary adherence among hypertensive patients.

Methods: The methodology used was quantitative correlational research with a cross-sectional design. A total of 63 participants were included as samples through quota sampling. Data were collected using questionnaire instruments that measured family support and dietary adherence variables, which were subsequently tested statistically using Spearman Rank.

Results: The empirical findings indicated that most respondents received social assistance from their families at moderate to optimal levels, in line with dietary adherence that was mostly in the adherent category. Statistical analysis produced a value of $p = 0.002$ ($\alpha = 0.05$), indicating a significant relationship with a moderate level of association between the two variables.

Conclusions: Family support is significantly associated with dietary adherence among patients with hypertension. Better family support is related to higher patient adherence to the recommended hypertension diet. Therefore, family involvement should be strengthened as part of sustainable hypertension management.

Keywords: family support, dietary adherence, hypertension, health behavior.

Introduction

Dietary adherence among patients with hypertension remains relatively low. Several studies have shown that many patients are not yet consistent in implementing dietary patterns that restrict sodium intake. An investigation conducted by (Lubis et al., 2024) demonstrated that a number of patients still routinely consume high-salt foods and experience difficulties controlling sodium intake according to recommendations. The study by (Anifah Nur Annisa & Dewi Kartika Sari, 2024) also showed that dietary adherence among patients with hypertension has not been optimal, even though patients have received education from health workers. In addition, the study by (Patarru & Solon, 2022) explained that many patients do not yet

understand the urgency of the DASH dietary intervention, so they have not implemented an eating pattern aligned with those clinical guidelines.

These findings show that dietary non-adherence is a problem that frequently occurs among patients with hypertension in various health care settings. When patients do not adhere to the diet, blood pressure becomes difficult to control and the risk of complications increases. This condition confirms that dietary adherence is not merely a recommendation, but an important component in the successful management of hypertension.

Dietary adherence is a major issue in hypertension management because it is directly related to the success of long-term therapy. Previous research stated that low dietary adherence is determined by patients' internal elements, such as daily consumption patterns and personal psychological motivation, in addition to external stimuli that primarily originate from family assistance. Patients who do not receive adequate family support tend to experience difficulty maintaining dietary changes, especially when the family environment still practices high-salt food consumption habits. This condition causes dietary adherence to become unsustainable and prevents blood pressure control goals from being achieved optimally (Presilia et al., 2020).

Many patients with hypertension have not received optimal family support in following their diet. Families often provide insufficient attention, information, and concrete assistance, such as preparing low-salt foods or reminding patients about dietary rules. In addition, some families do not yet understand the importance of the hypertension diet, so the support provided is inconsistent. This condition makes it difficult for patients to adhere to the diet and places them at risk of uncontrolled blood pressure (Liawati et al., 2024).

Data from the World Health Organization (World Health Organization (WHO), 2023) show that approximately 1.28 billion adults between the ages of 30 and 79 years have been diagnosed with hypertension, with the majority, almost two-thirds, living in low- and middle-income countries. This figure implies that one in four adults on the planet faces high blood pressure, which can potentially trigger stroke and heart disorders. Based on the latest national survey results, it is estimated that around three to four out of every ten adults experience high blood pressure, with prevalence ranging from 30% to 35%. This condition shows that hypertension is a common chronic disease and plays a major role as a crucial triggering element that initiates the clinical manifestations of cardiovascular disorders and cerebral ischemia in Indonesia (RISKESDAS, 2023).

In East Java Province, the prevalence of hypertension among adults is relatively high, estimated to reach 30% to 36%, or around three to four out of every ten adults. This figure shows an incidence rate that is relatively comparable and even relatively above the national

average. The main contributors behind the high prevalence of high blood pressure include sodium intake habits that exceed normal limits, low physical activity, excess body weight, smoking habits, and lack of routine blood pressure checks. Considering that most patients do not complain of specific clinical symptoms, periodic examinations at health facilities such as community health centers or integrated health posts are important measures for detecting hypertension early and preventing serious complications such as stroke and heart failure (RISKESDAS, 2023).

One national study found that family assistance has a close correlation with discipline in maintaining dietary patterns among patients with high blood pressure. Patients who receive this assistance show a greater tendency to remain orderly in following the rules of the hypertension diet than those who do not (Liawati *et al.*, 2024). Dietary non-adherence among patients with hypertension becomes an obstacle to blood pressure control, so treatment goals are not achieved optimally. Low dietary adherence also increases the risk of serious complications such as stroke, heart disorders, and kidney disease; therefore, family support is needed to help patients consistently follow the recommended diet.

High blood pressure is a clinical condition in which arterial blood pressure increases persistently above normal limits. Medical guidelines establish this threshold at a systolic pressure of at least 140 mmHg or a diastolic pressure of at least 90 mmHg through repeated valid measurements. Physiologically, blood pressure regulation is determined by the interaction between cardiac output and peripheral vascular resistance. Increased arterial pressure occurs when blood vessels constrict, the flexibility of the vessel walls decreases, or the volume of circulating blood increases. Cases without a specific trigger are categorized as primary or essential hypertension, whereas cases triggered by organ abnormalities such as kidney disease, endocrine system disorders, or medication side effects are classified as secondary hypertension (Agustina, 2019; Rahmawati & Kasih, 2023).

Hypertension often does not cause clear symptoms. Patients usually only experience dizziness, mild headaches, or fatigue. However, when blood pressure increases sharply, severe dizziness, blurred vision, or shortness of breath may appear, indicating a medical emergency that requires immediate management. In the long term, uncontrolled hypertension can damage blood vessel walls and impair the function of target organs. Its fatal effects may damage the heart, brain, kidneys, and retina. Long-standing high blood pressure also multiplies the risk of stroke, myocardial infarction, heart failure, chronic kidney disease, and visual impairment; therefore, routine blood pressure management is very important to prevent serious complications (Goorani *et al.*, 2025). Hypertension is usually caused by many interacting

factors, such as family history, aging, high-sodium food consumption habits, excess body weight, low physical activity, prolonged stress, smoking habits, and alcohol consumption. Secondary hypertension may also be caused by other diseases, such as kidney or hormonal disorders (Goorani et al., 2025).

Although various triggers of high blood pressure have been identified, inconsistencies in findings across studies are still found, particularly regarding the family support variable. A study by Syaharani (2022) demonstrated a significant correlation between family contribution and the level of patient adherence in following a low-salt diet. Conversely, an investigation by Anifah Nur Annisa and Dewi Kartika Sari (2024) showed no significant relationship between family assistance and dietary discipline among patients with hypertension.

Dietary adherence is very important for patients with hypertension because an appropriate diet helps lower blood pressure and prevent serious complications. Research in *Jurnal Ilmiah Ilmu Keperawatan Indonesia* proved that dietary discipline among patients with hypertension is influenced by family assistance, level of understanding, internal motivation, and commitment to recovery. Patients who receive optimal family support and are equipped with adequate information show a higher tendency to comply with recommended nutritional guidelines than those who receive less support or information. This dietary adherence forms the basis of hypertension control because a good eating pattern helps control blood pressure and reduce the risk of complications such as stroke or heart disease (Patarru & Solon, 2022).

Based on the preliminary observation conducted by the researcher in the outpatient unit of Bantaran Community Health Center, Probolinggo Regency, it was found that the total population was 75 people who visited the outpatient unit of Bantaran Community Health Center, Probolinggo Regency, in November 2025, and 100% were found to have primary hypertension. Some patients still consumed high-salt foods, such as chili sauce, processed foods, and salty side dishes, which could worsen their blood pressure condition. In addition, some respondents admitted that it was difficult to change their eating habits because of the influence of a family environment that was still accustomed to using salty seasonings in daily cooking.

Based on the interview results, the researcher observed 10 patients at the community health center. The observation results showed that the correlation between family assistance and dietary discipline still produced varying results for each individual. Nevertheless, among the 10 people observed, 7 were known to be non-adherent in following the recommended hypertension diet.

Interviews with health workers in the area also showed that the family's role in helping patients follow a healthy dietary pattern was still relatively low. Many family members did not yet understand the importance of emotional and instrumental support, such as preparing low-salt foods, reminding patients about medication schedules, or providing motivation for routine blood pressure control. This lack of family involvement caused patients to be frequently inconsistent in following hypertension diet and treatment.

In addition to pharmacological management or medication, hypertension management efforts must also pay attention to diet. Diet certainly requires a good social environment, one aspect of which is the presence of the closest support system, namely the family. Active involvement of family members plays a crucial role in assisting patients with hypertension in following a healthy eating pattern. Practical support, such as helping prepare low-salt foods, informational support in the form of reminders about dietary rules that must be followed, and emotional support such as providing encouragement to change unhealthy eating habits, have been shown to improve patient adherence to dietary recommendations. Various studies show that interventions involving family members can effectively reduce salt intake and help maintain blood pressure stability among patients with hypertension (Susanto et al., 2024).

This study was conducted with the expectation of examining family support for patients with hypertension in relation to dietary adherence. Optimal family support can play an important role in helping patients with hypertension regulate their daily food consumption patterns, especially in limiting intake that can increase blood pressure. With good family involvement, the process of hypertension control is expected to run more effectively and sustainably. Based on this background, the researcher was interested in conducting a study entitled "The Relationship Between Family Support and Dietary Adherence Among Hypertension Patients in the Outpatient Unit of Bantaran Community Health Center, Probolinggo Regency".

Methods

This study was an analytical quantitative study using a correlational approach with a cross-sectional design. This method was applied to identify the relationship between two variables, namely family support as the independent variable and dietary discipline among patients with hypertension as the dependent variable, without providing treatment or intervention to respondents. The study was conducted in the Outpatient Unit of Bantaran Community Health Center, Probolinggo Regency, at a specific time according to the data collection schedule established by the researcher.

The subjects of this study included all patients with hypertension who visited the Outpatient Unit of Bantaran Community Health Center, with a total of 75 individuals. The sample was determined using quota sampling, in which the researcher established specific parameters to select participants. Based on this approach, 63 respondents who met all inclusion and exclusion criteria were selected. The inclusion criteria consisted of patients with a medical diagnosis of hypertension, the ability to communicate effectively, willingness to participate, and living with their family members. Conversely, the exclusion criteria were applied to eliminate patients who did not complete all stages of the study or chose to withdraw during the observation process.

The data collection process in this study relied on a structured questionnaire instrument as the main measurement tool. The instrument was designed to assess two main variables, consisting of the family support questionnaire and the respondent dietary adherence questionnaire. The questionnaire used to measure the family support variable was adopted from a previous research instrument taken from Kumala (2018), which stated that all statement items had been tested for validity with r values ranging from 0.949 to 0.983. Based on these test results, the measurement tool applied in this study was proven valid and recorded a Cronbach's Alpha coefficient of 0.957. This value indicates that the questionnaire has a very high degree of reliability. The instrument for measuring family support includes four main dimensions: informational, appraisal, instrumental, and emotional support. Meanwhile, the dietary adherence evaluation instrument adopted a questionnaire from the study by Kumala (2018), which reported that all question items had passed validity testing with r values ranging from 0.949 to 0.983. The successful test results confirmed that this dietary adherence instrument has strong validity for reuse. The dietary adherence questionnaire was used to assess the behavior of patients with hypertension, such as salt restriction, food type selection, and regularity of eating patterns. Data were collected by having respondents complete the questionnaire directly after receiving an explanation from the researcher.

All collected data were then processed and examined using Statistical Package for the Social Sciences (SPSS) software. The data processing procedure was carried out through two levels of analysis, namely univariate analysis and bivariate analysis. Univariate analysis was applied to map the frequency distribution of respondent characteristics and each research variable. Meanwhile, bivariate analysis was performed by applying the Spearman Rank statistical test to identify the relationship between the family support variable and the level of dietary adherence among patients with hypertension. Decision-making was based on a significance value of $p < 0.05$. If a significant result was obtained, it could be concluded that

there was a relationship between the variables, which was then evaluated to observe the correlation that occurred. In addition, all procedures in this study were declared to have passed ethical clearance by the relevant committee at the KEPK of Universitas dr. Soebandi Jember with number 267/KEPK/UDS/III/2026.

Results

The profile of the subjects in this study was identified through several demographic and clinical indicators, including age group, sex, educational background, employment status, and the level of dietary adherence among patients with hypertension undergoing treatment at the Outpatient Unit of Bantaran Community Health Center, Probolinggo Regency. The following table presents categorical data in the form of a frequency distribution table.

Table 1. Characteristics of Respondents Based on Patients with Hypertension in the Outpatient Unit of Bantaran Community Health Center, Probolinggo Regency.

Characteristic		Frequency	Percentage (%)
Age	Early adulthood (26-35)	4	6,3
	Late adulthood (36-45)	8	12,7
	Early elderly (46-55)	23	36,5
	Late elderly (56-65)	19	30,2
	Older adults (66-100)	9	14,3
Total		63	100
Sex	Male	21	33,3
	Female	42	66,7
Total		63	100%
Education	No Schooling	7	11,1
	Junior High School	8	12,7
	Senior High School	5	7,9
	Elementary	42	66,7
	Bachelor	1	1,6
Total		63	100
Occupation	Not Working	4	6,3
	PNS	5	7,9
	Self-employed	14	22,2
	Farmer	16	25,4
	Housewife (IRT)	24	38,1
Total		63	100

Source: Primary Data, April 2026

Based on Table 1, the distribution of respondent characteristics shows that most respondents were in the early elderly age group (36.5%) and late elderly age group (30.2%). The average sex category was female (66.7%). The education level completed by most

respondents was elementary school (66.7%), and the most common occupations were housewife (38.1%) and farmer (25.4%). The largest percentage in each characteristic indicates the most dominant category in the research data (Sugiyono, 2021).

Table 2. Frequency Distribution of Family Support Among Patients With Hypertension in the Outpatient Unit of Bantaran Community Health Center, Probolinggo Regency.

Category	Frequency	Percentage (%)
Good	17	27.0
Fairly Good	38	60.3
Poor	8	12.7
Total	63	100

Source: Primary Data, April 2026

The data in Table 2 confirm that the majority of participants were in the fairly good category, with a total of 38 individuals (60.3%).

Table 3. Frequency Distribution of Dietary Adherence Among Patients With Hypertension in the Outpatient Unit of Bantaran Community Health Center, Probolinggo Regency.

Category	Frequency	Percentage (%)
Adherent	42	66.7
Moderately Adherent	21	33.3
Non-adherent	0	0
Total	63	100

Source: Primary Data, April 2026

Based on the data in Table 3, most respondents showed a high level of adherence to the dietary program, with a total of 42 individuals (66.7%). This finding indicates that more than half of the respondents had followed the recommendations given.

Table 4. Cross-Tabulation of the Relationship Between Family Support and Dietary Adherence Among Hypertension Patients in the Outpatient Unit of Bantaran Community Health Center, Probolinggo Regency.

Family Support		Dietary Adherence				<i>P Value</i>	
	Adherent		Moderately Adherent		Total		0.002
	F	(%)	F	(%)	JML	(%)	
Good	15	23,8	2	3,2	17	27,0	
Fair	24	38,1	14	22,2	38	60,3	
Poor	2	3,2	6	9,5	8	12,7	
Total	41	65.1	22	34.9	63	100	

Source: Primary Data, April 2026

Based on the cross-tabulation, fairly good family support was associated with dietary adherence of 38.1%. This condition illustrates that family support that is not yet optimal can affect patients' consistency in following the diet, so the adherence achieved is not fully optimal.

Overall, among the 63 respondents, most study subjects were classified in the adherent group, with a total of 41 individuals (65.1%), while the remaining 22 people (34.9%) were in the moderately adherent category. This phenomenon indicates a tendency in which the quality of patients' dietary adherence becomes much more optimal as the support provided by the family becomes stronger.

The Spearman Rank statistical test was applied to examine the significance of the correlation between the family support variable and the level of patient dietary adherence. The data processing results showed a p-value of 0.002 ($p < 0.05$), which empirically proves that there is a significant and real relationship between the form of support provided by the family and the level of patient discipline in following the diet.

Table 5. Spearman Rank Test

Correlated variables	r (Correlation Coefficient)	P-value	N
Family Support - Dietary Adherence	0,383	0,002	63

Source: Primary Data, April 2026

The information in Table 5 confirms a significant correlation between the family support variable and the level of patient dietary adherence ($p < 0.05$). The degree of association between the two variables falls into the moderate category and is positive, as indicated by the correlation coefficient value ($r = 0.383$), meaning that an increase in the quality of support facilitated by the family is directly proportional to an increase in patient discipline in adhering to the medically recommended dietary regimen.

Discussion

The findings of this study indicate that the contribution of family support for patients with hypertension in the Outpatient Unit of Bantaran Community Health Center, Probolinggo Regency, was mostly at a fairly good level. This condition can be associated with the occupational profile of the study subjects, in which the largest proportion was dominated by housewives (IRT), reaching 38.1%. Domestic activities as housewives allow respondents to

allocate most of their time at home, so the intensity of communication and the degree of family member involvement in disease management can take place more optimally (Gaol, 2022; Manoppo, 2025). The presence of family members at home for a longer period provides greater opportunities to give attention, supervision, and direct assistance in caring for patients with hypertension compared with families whose members all work outside the home (Taqiya, 2025). The condition of respondents dominated by housewives makes their daily activities more centered in the domestic environment and tends to enable optimal support, both in the form of instrumental support, such as preparing food according to the diet and reminding patients about meal and medication schedules, and emotional support (Anggraheni, 2022).

In the dietary compliance variable it was found that in the Outpatient Unit of Bantaran Community Health Center, Probolinggo Regency, was mostly in the adherent category, at 66.7%. According to the study by (Syaharani, 2022), the high level of dietary adherence in this study can be associated with respondent characteristics dominated by early elderly and late elderly age groups, as well as the majority being female. In addition, in the study by (Mariana et al., 2022), the demographic characteristics of study subjects were dominated by women with housewife employment status, allowing them to have more time to regulate eating patterns, prepare their own food, and control salt consumption and types of daily food. Problems in dietary adherence, especially regarding food types, are influenced by knowledge, education level, family support, eating habits, economic conditions, patient motivation, and the role of health workers. This condition shows that dietary adherence occurs because there is an opportunity and ability to manage eating patterns independently within the home environment.

The results of this study are in line with previous research, (Adeleye et al., 2024), which showed that dietary adherence among patients with hypertension occurs due to factors of age, sex, and daily activities. That study found that older patients and female patients tended to have higher levels of DASH dietary adherence. Theoretically, World Health Organization (2023) states that the level of patient adherence to dietary regulation is classified as a form of self-care behavior determined by the level of individual understanding, habits, and environmental support, where the higher the individual's control over the environment, the higher the level of adherence in following the diet. Bantaran Community Health Center (Puskesmas) Outpatient Unit in Probolinggo Regency fell into the "adherent" category (66.7%). According to research by Syaharani (2022), this high level of dietary adherence can be attributed to the respondents' characteristics specifically, the fact that the study subjects were predominantly women working as housewives. This role likely afforded them more time to manage their diets, prepare their own meals, and control their daily salt intake and food choices. These findings suggest that

dietary adherence was facilitated by the opportunity and ability to manage one's diet independently within the home environment, given that their daily activities were primarily centered at home.

The empirical data in this study prove the existence of a meaningful correlation between the positive contribution of the domestic environment and discipline in maintaining dietary patterns among patients with high blood pressure. This relationship is indicated by the obtained p value of 0.002, which is below the significance threshold of 0.05, as well as a moderate relationship strength ($r = 0.383$). In general, respondents were dominated by older adults, women, those with basic education, and many who served as housewives. This condition indicates that most respondents were more often at home and had sufficiently intensive interaction with their families. The cross-tabulation results also showed that respondents with good family support were mostly in the adherent category (23.8%), whereas poor family support was more frequently found in the moderately adherent category (9.5%). This evidence indicates that improving the quality of positive contribution from the family is aligned with strengthening individual commitment to following the recommended dietary regulation.

Basically, dietary adherence among patients with hypertension does not occur directly. This phenomenon occurs through continuous phases rooted in the subject's fundamental characteristics. This condition is particularly evident in older patient groups that begin to experience degradation in physical capacity and cognitive function. These limitations appear in the form of decreased stamina to prepare meals independently, memory barriers related to timing of nutritional intake, and limited attention to the classification of food ingredients that are recommended or should be avoided. In this condition, patients are not fully able to regulate their diet independently and need assistance from others. In this condition, the family begins to take roles in small matters, such as reminding patients of mealtimes, controlling salt use when cooking, and helping choose and prepare foods that are appropriate to the hypertension diet recommendations (InaKii *et al.*, 2021).

Family support that is provided continuously makes patients feel cared for, thereby increasing motivation and self-confidence (self-efficacy) in following the diet. This encourages the formation of healthy behavior which, if carried out consistently, will become a habit and ultimately increase dietary adherence (Hemodialysis *et al.*, 2022).

This phenomenon indicates that optimizing positive contribution from the family is directly proportional to increasing the subject's discipline in implementing dietary regulation. The active role of the domestic environment is not limited to providing psychomotor assistance, but also plays a central role as a pillar that strengthens the patient's psychological condition,

reduces stress, and increases the patient's psychological comfort. A good psychological condition will make it easier for patients to carry out recommended lifestyle changes (Hemodialisis et al., 2022).

These empirical findings are consistent with a previous study by (Susanto et al., 2024), which emphasized that contributions from the domestic environment can optimize the subject's discipline through monitoring instruments, provision of psychological encouragement, and real assistance in dietary management. In line with this, research by (Hemodialisis et al., 2022) also proved that subjects who received positive affirmation from their families tended to show higher stability in implementing nutritional regulation continuously. Theoretically, (WHO, 2021) explains that adherence is part of self-care behavior influenced by social support, whereas (Notoatmodjo, 2020) states that positive contribution from the domestic environment is categorized as a reinforcing factor that plays a very crucial role in shaping health behavior.

In addition, family support also affects the patient's psychological condition. Patients who receive support usually feel calmer, less stressed, and more confident in managing their disease. Conversely, when support is lacking, subjects tend to repeat previous consumption behavior patterns, such as choosing foods with high sodium levels or lacking discipline in scheduling nutritional intake. This phenomenon was identified among the group of respondents who received minimal positive contribution from the domestic environment, where the majority only reached a moderate level of adherence. This condition proves that the absence of continuous assistance makes it more difficult for patients to maintain dietary behavior in the long term.

The following are factors in which family support is poor but the patient remains adherent:

1. High intrinsic patient motivation. Patients who have strong awareness of the importance of maintaining health tend to continue following the diet independently without depending on family support.
2. Good level of knowledge. Patients who understand the disease and hypertension dietary rules well will be more able to control themselves in choosing food types, arranging meal schedules, and determining food portions.
3. Experience of illness or a history of complications can also motivate adherence. Patients who have experienced severe symptoms or complications tend to be more disciplined in following the diet as a preventive effort so that their condition does not worsen (Syafitri, 2025).

This study indicates that the correlation between the positive contribution of the domestic environment and discipline in following dietary patterns is formed through continuous and interrelated stages, beginning with individual characteristics, family interactions, and the formation of motivation and health behavior. Therefore, efforts to improve dietary adherence among patients with hypertension cannot be limited to the subject alone, but must integrate the family as a core component of the intervention program. Health education involving families, assistance, and strengthening the family's role as a support system are highly needed so that dietary adherence can be maintained consistently and sustainably.

Conclusion

The findings of this study indicate that family support among patients with hypertension in the Outpatient Unit of Bantaran Community Health Center, Probolinggo Regency, was predominantly at a moderate level. Most respondents also demonstrated good dietary adherence, while a smaller proportion showed moderate adherence, and no respondents were classified as non-adherent. Furthermore, there was a significant relationship between family support and dietary adherence among patients with hypertension. The relationship between the two variables was moderate in strength. These findings suggest that better family support is associated with higher adherence to dietary recommendations among patients with hypertension. Therefore, strengthening family involvement is essential to support consistent dietary adherence and improve hypertension management.

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